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EXAMINER

TON, MINH TOAN T

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/667,641
Filing Date: September 23, 2000
Appellant(s): LI ET AL.

MAILED

JAN 16 2007

GROUP 2800

Motorola Inc.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/13/06 appealing from the Office action mailed 03-21-06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

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(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4726663	Buzak	02-1988
5598285	Kondo	01-1997
6927765	Masazumi	08-2005
6697039	Yamakawa	02-2004
6091382	Shioya	02-2000

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(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buzak (US 4726663) in view of Kondo (US 5598285).

Buzak discloses a switchable color filter comprising (*see at least Figure 3, col. 5, line 19 to col. 7, line 34*): a transparent front plate (not shown, inherent element); a back plate (not shown, inherent element) spaced apart from the transparent front plate; a cholesteric liquid crystal (LC) material between the front plate and the back plate, the cholesteric liquid crystal material having a reflective state, wherein the cholesteric liquid crystal material in the reflective state reflects light characterized by a first wavelength in an absence of an applied electric field; means for applying an electric field to the cholesteric liquid crystal material in the reflective state to cause the cholesteric liquid crystal material to reflect light characterized by a second wavelength.

The limitation not disclosed by Buzak is 'means for applying an electric field parallel to the back plate'.

Kondo discloses the use of twisted nematic type (TN) liquid crystal in the display device (*see at least col. 23, 2nd and 3rd paragraph*). By definition, twisted nematic type liquid crystal

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comprises a chiral dopant material added to nematic liquid crystal to generate a 90° twist, i.e., Kondo discloses a liquid crystal display device comprising chiral liquid crystal material.

The use of in-plane-switching (electrodes on the same substrate, i.e., means for applying an electric field parallel to the back plate') field LCD display device is common and known in the art for achieving advantages such as wide viewing angle. Kondo discloses an IPS-LCD device including twisted nematic type liquid crystal (i.e., including a chiral dopant material by definition above) comprising a means of electric field applied parallel to the substrate for achieving advantages such as wide viewing angle. Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a means for applying an electric field parallel to the back plate for achieving advantages such as wide viewing angle (see discussion in at least col. 2, lines 38-42).

Per at least claims 2-3, see at least col. 5, line 19 to col. 7, line 34 of Buzak.

(10) Response to Argument

Appellant's arguments are as follows:

- (a) Buzak fails to disclose means for applying an electric field parallel to the back plate.
- (b) Kondo has nothing to do with cholesteric liquid crystal or the chiral liquid crystal taught in Buzak.
- (c) Kondo fails to disclose any use with chiral liquid crystal.
- (d) Kondo teaches using a field to only switch a nematic liquid crystal, while the teachings of Kondo do allow for the range of material selection to be increased, the teachings still only apply to nematic liquid crystal, not the chiral liquid crystal taught in Buzak.

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(e) Due to the fact that there is no helical structure in Kondo, the type of switching used in Kondo cannot provide the claimed feature of causing a cholesteric liquid crystal material to reflect light characterized by a second wavelength different from a first wavelength.

(f) The Office Action has applied impermissible hindsight in attempting to combine the references. The Office Action has not provided a prima facie case of obviousness because there is no suggestion or motivation to modify the references to achieve the claimed invention.

Examiner's responses to Appellant's arguments are as follows:

(a) The rejection is under 35 USC 103, not 35 USC 102. Kondo, the secondary reference, teaches means for applying an electric field parallel to the back plate.

(b) Kondo discloses the use of twisted nematic type (TN) liquid crystal in the display device (see at least col. 23, 2nd and 3rd paragraph). By definition, twisted nematic type liquid crystal comprises a chiral dopant added to nematic liquid crystal (see at least the following evidences: Masazumi, US 6927765, at least col. 4, 4th paragraph; Yamakawa, US 6697039, at least col. 6, 5th paragraph; Shioya, US 6091382, at least col. 28, 5th paragraph). Thus, Kondo discloses a liquid crystal display device comprising chiral liquid crystal material.

(c) Kondo discloses the use of twisted nematic type (TN) liquid crystal in the display device (see at least col. 23, 2nd and 3rd paragraph). By definition, a twisted nematic type liquid crystal comprises a chiral dopant added to nematic liquid crystal (see at least the following evidences: Masazumi, US 6927765, at least col. 4, 4th paragraph; Yamakawa, US 6697039, at least col. 6, 5th paragraph; Shioya, US 6091382, at least col. 28, 5th paragraph). Thus, Kondo discloses a liquid crystal display device comprising chiral liquid crystal material.

(d) The use of in-plane-switching (electrodes on the same substrate, i.e., means for applying an electric field parallel to the back plate') field LCD display device is common and known in the art for achieving advantages such as wide viewing angle. Kondo discloses an IPS-LCD device including a twisted nematic type liquid crystal (i.e., including a chiral dopant material by definition mentioned above) comprising a means of electric field applied parallel to the substrate for achieving advantages such as wide viewing angle. Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a means for applying an electric field parallel to the back plate for achieving advantages such as wide viewing angle (see discussion in at least col. 2, lines 38-42).

(e) Kondo discloses the use of twisted nematic type (TN) liquid crystal in the display device (see at least col. 23, 2nd and 3rd paragraph), wherein a twisted nematic type liquid crystal comprises a chiral dopant added to nematic liquid crystal (as explained above). By adding chiral dopant to nematic liquid crystal material, the liquid crystal molecules form a helical structure. See at least the following evidences: Masazumi, US 6927765, at least col. 4, 4th paragraph; Yamakawa, US 6697039, at least col. 6, 5th paragraph; Shioya, US 6091382, at least col. 28, 5th paragraph.

Thus, due to the fact that Kondo discloses the display device comprising a helical structure, the type of switching used in Kondo is capable of causing a cholesteric liquid crystal material to reflect light characterized by a second wavelength different from a first wavelength.

(f) Buzak, the main reference, discloses all except for 'means for applying an electric field parallel to the back plate'.

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Kondo, the secondary reference, discloses the use of twisted nematic type (TN) liquid crystal in the display device (see at least col. 23). By definition, twisted nematic type liquid crystal comprises a chiral dopant material added to nematic liquid crystal, i.e., Kondo discloses a liquid crystal display device comprising chiral liquid crystal material.

The use of in-plane-switching (electrodes on the same substrate, i.e., means for applying an electric field parallel to the back plate) field LCD display device is common and known in the art for achieving advantages such as wide viewing angle. Kondo discloses an IPS-LCD device including twisted nematic type liquid crystal (i.e., including a chiral material) comprising a means of electric field applied parallel to the substrate for achieving advantages such as wide viewing angle. Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a means for applying an electric field parallel to the back plate for achieving advantages such as wide viewing angle (see discussion in at least col. 2, lines 15-42).

Thus, the Office Action has both applied permissible hindsight and provided a prima facie case of obviousness to combine the references (Buzak and Kondo).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Toan Ton, Primary Examiner


TOANTON
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